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Procedia - Social and Behavioral Sciences 47 (2012) 848 – 853

Procedia
Social and Behavioral Sciences

CY-ICER2012

Determining level of students' technological innovativeness : a case study

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Abstract

In today technological developments affect society in some fields such as economy, management, sociology and guide individual's behaviour. Especially high tech products that are renewed daily complicate to follow and learn getting information for individual. This complexity can be removed increasing individual's interest in product. Consumers' interest in new high tech product depends on level of their technological innovativeness. In other words technological innovativeness affect individual's tendency to get information about product class and new products in technological field. In this study a questionnaire has been applied to students that are more interested in technological innovations. Mobile phone has been selected as the product. The data has been collected through a questionnaire included technological innovativeness scale and questions about mobile phone use. According to results survey participants' using time of the their same mobile phone is short. They often change their mobile phones. The level of survey participants' technological innovativeness is high.

Keywords: Mobile phone, technological innovativeness, consumer behaviour

1. Introduction

The concept of consumer innovativeness has occurred in 1970's and became an important issue in new product adoption and diffusion. This concept is important not only marketers but also pragmatists. Because many firms rely on new product success in order to profit and survive in the competitive environment (Nasutio and Garnidan, 2010).

There are a lot of studies on "consumer innovativeness" in marketing litterateur because of its importance. Marketing experts state that innovativeness is one of the important issues in behavioural sciences (Kim,2008:21). So evaluating innovativeness in terms of consumer and determining its conceptual dimensions are very crucial.

2. Technological Innovativeness

When examining the studies, it is mentioned that there are two main dimension of consumer innovativeness. These are global/innate innovativeness and domain specific/product category specific innovativeness. Global innovativeness is the level of general innovativeness. Domain specific innovativeness is behaviour that is observed

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1877-0428 © 2012 Published by Elsevier Ltd. Selection and/or peer review under responsibility of Prof. Dr. Hüseyin Uzunboylu
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and measured as innovative behaviour. This dimension is to be informed of new products and the tendency of adoption these innovations. Domain specific innovativeness is related to products. (Leavitt & Walton,1975, Midgley & Dowling,1978, Flyn & Goldsmith,1993, Hirunyawipada & Paswan,2006, Goldsmith & Foxall,2003).

In the marketing litterateur, domain specific innovativeness has been handled in terms of fashion and technological. In this study technological innovativeness has been examined. There are a few studies on the definition of technological innovativeness. Because technology is a very wide concept, technology and innovation concepts are defined separately. The technology builds a bridge in solving real world problems by using scientific methods. In other words, the technology are operations and methods used by people while producing (Khalil, 2000: 65,70). Innovativeness is to improve by creating new things. Innovativeness intergrates problem solver and profit oriented R&D and curiosity oriented research. So it bulged by generating new technology and market opportunity.

Generally technological products are a combination of software and hardware elements (Rogers, 1995). So the technological innovation adoption or rejection decision includes high level uncertainty regarding product's expected conclusions. Technological products reduce the uncertainty regarding product's use and application (Rogers, 1995). Furthermore technological product ownership encourage using functional the similar products(Atkin ve LaRose, 1994; LaRose ve Atkin, 1988).

Many studies in different technological fields have handled consumer technological innovativeness. In these studies DSI (Domain Specific Innovativeness) scale developed by Goldsmith and Hofacker has been used. Technological innovativeness has affected the knowledge acquisition tendency about new products and product category in technological field (Goldsmith ve Hofacker, 1991).

3. Determining Level of Students' Technological Innovativeness: A Case Study

3.1. Aim, scope and border of research

The aim of this study is to determine the level of undergrads' technological innovativeness in Erzurum. Additionally it is aimed to define the correlation between survey participants' demographic and economic features and technological innovativeness. The scope of the study constitutes the undergrads in Erzurum Atatürk University. Mobile phone has been selected as product category. Because many young people follow innovations in this product. So results cannot be prevented for the other product groups.

3.2. Methodology of research

3.2.1. Sampling process

The undergrads who study in Erzurum Atatürk University consist of the universe of the research. As sampling method, convenience sampling method has been chosen. Sampling size has been regarded as 384. Questionnaire study was held between September 5-15 2011. Totally 400 questionnaire were applied and 390 questionnaire left because of misfiling.

3.2.2. Preparatory work

Before preparing an exact questionnaire form and collecting information, there were 20 undergrads who were studied in Atatürk University with pre-questionnaire process. They were asked to assess scale statements about technological innovativeness and mobile phone use. After these regulations, necessary corrections were made and form was revised.

3.2.3. Data collection

The data was collected by using survey method with face to face. In questionnaire form, there are 3 groups of questions. First group was prepared to determine the undergrads' mobile phone use. The second group was prepared to determine level of undergrads' technological innovativeness. The third group was prepared to determine the demographic features of the participants. The level of undergrads' technological innovativeness was measured by DSI scale.

Questions related with technological innovativeness were asked by means of Likert scale of 5. (5=I totally agree, 1= I never agree). Data was analysed by the way of SPSS 13.0 Statistics programme. In data analysis, descriptive statistics and correlation analysis were used.

4. Data Analyses

4.1. Demographic and economic feature of survey participants

Demographic and economic feature of survey participants are shown Table 1.

Table 1. Demographic and Economic Feature of Survey Participants

Demographic and Economic Feature		
Sex	***(f)***	***(%)***
Female	194	49,7
Male	196	50,3
Age	***(f)***	***(%)***
18 and under	77	19,7
19-24	286	73,3
25+	27	**7**
Income	***(f)***	***(%)***
1000 TL and under	77	19,7
1001-2000TL	286	73,3
2001-3000TL	27	7
3001 TL+	77	19,7
Total	***390***	***100***

As it is seen in table 1 50,3 % of survey participants is male, 73,3 % is between 19-24 age, 73,3 % earns between 1001-2000 TL.

4.2. Mobile phone buying and using behaviour of survey participants

Mobile phone buying and using behaviour of survey participants are shown in Table 2.

Table 2. Mobile Phone Buying and Using Behaviour of Survey Participants

Using Time	***(f)***	***(%)***
1-4 years	256	65,6
5-9years	83	21,2
10 year and over	61	13,2
Changing Frequency	***(f)***	***(%)***
6 months and under	92	23,5
6 month-1 year	196	50,2
2-3 years	68	17,4
4 year and over	34	8,9
Total	***390***	***100***

As it is seen in table2, 65,6 % of survey participants use their mobile phones 1-4 years, 50,2 % change their mobile phones between 6 month-1 year.

4.3. Technological innovativeness levelof survey participants

Survey participants' answers about technological innovativeness are shown in table 3.

Table 3. Level of Survey Participants' Technological Innovativeness

Technological Innovativeness (Alpha= 0,76)	***Mean***	***Std. deviation***
Generally, I am among the first in my circle of friends to buy a new technological mobile phone.	***3,59***	1,208
If I heard that a new technological mobile phone was available through a local store, I would be interested enough to buy it.	***3,82***	1,075
Compared to my friends, I do little shopping for new technological mobile phone. [a]	***3,78***	1,119
I would consider buying new technological mobile phone even if I hadn't heard of it yet.	2,91	1,311
Generally, I am the last in my circle of friends to know the brands of new technological mobile phone.[a]	2,63	1,207
I know more about new technological mobile phone than other people do.	***3,67***	1,034
General Mean = 3,4		

(a=reverse coded)

In table 3, there were shown means and standart deviations ofsurvey participants' answers' towards technological innovativeness. The general mean of scale is 3,4 and alpha coefficient of scale is 0,76. According to this, it is said that the scale is reliable and level of survey participants' technological innovativeness is high. As seen the table 3, the statement that has highest mean is "If I heard that a new technological mobile phone was available through a local store, I would be interested enough to buy it." (3,82). After this statement, other statements that have high mean are "Compared to my friends, I do little shopping for new technological mobile phone." (3,78), "I know more about new technological mobile phone than other people do. " (3,67) and "Generally, I am among the first in my circle of friends to buy a new technological mobile phone."(3,59)

4.4. The correlation between demographic and economic features and technological innovativeness

The correlation between demographic and economic features and technological innovativenessis shown table 4.

Table 4.The Correlation Between Demographic and Economic Features and Technological Innovativeness

Demographic And Economic Features / ***Technological innovativeness***		***Sex***	***Age***	***Income***
Generally, I am among the first in my circle of friends to buy a new technological mobile phone.	Cor.C.	***0,069****	0,009	***0,107****
	p.	***0,020***	0,907	***0,026***
	n	***390***	390	***390***
If I heard that a new technological mobile phone was available through a local store, I would be interested enough to buy it.	Cor.C.	***0,119****	0,008	-0,063
	p.	***0,002***	0,849	0,132
	n	***390***	390	390

Compared to my friends, I do little shopping for new technological mobile phone. [a]	Cor.C. p. n	***0,083**** ***0,030*** ***390***	0,021 0,596 390	0,039 0,348 390
I would consider buying new technological mobile phone even if I hadn't heard of it yet.	Cor.C. p. n	-0,033 0,326 390	***-0,077**** ***0,036*** ***390***	***0,070**** ***0,019*** ***390***
Generally, I am the last in my circle of friends to know the brands of the new technological mobile phone. [a]	Cor.C. p. n	-0,028 0,470 390	0,041 0,333 390	**0,235**** **0,000** **390**
I know more about new technological mobile phone than other people do.	Cor.C. p. n	***0,106***** ***0,012*** ***390***	***-0,090**** ***0,019*** ***390***	***0,105**** ***0,027*** ***390***

(** p < 0,01 * p < 0,05 a= reverse coded)

As seen in table 4, there are correlations among technological innovativeness and sex, age and income. According to results, men have a lot of information about new technological mobile phones (0,106**, p<0,05). They are more interested in new mobile phones and buy the products (0,119**,p<0,05; 0,083*,p<0,01;0,069*,p<0,01). Additionally younger consumers consider buying the new phones even if they don't have enough information about them and have more information about new technological mobile phone than other people do(-0,077*,p<0,01; -0,090*,p<0,01). As results people who have high income are the first people buying new technological mobile phones(0,107*, p<0,01; 0,070*, p<0,01; 0,235**,p<0,05; 0,105*, p<0,01). These people have more information about new mobile phones and mobile phone brands.

5.Results

According to results, survey participants' using time of their same mobile phone is short. They often change their mobile phones. The level of survey participants' technological innovativeness is high. They follow the new things about mobile phones. They are interested in new technological developments in mobile phone. When new technological mobile phone came out, they are interested in this product and research it. Therefore they have more information. They buy the new mobile phone earlier than their friends.

As results there are relationships among demographic and economic features and technological innovativeness. Men have a lot of information about new technological mobile phones. They are more interested in new mobile phones and buy them.Younger consumers consider buying the new phones even if they don't have enough information about these products. People that have high income are the first people who buy new technological mobile phones.

Young consumers are an important market section for companies that produce technological products like mobile phone. They follow the technological developments and are interested in these products. In order to draw young consumers' attention and reach them, companies may more advertise about these products. When companies advertise, they must point out newness in products and introduce products' differences from other products.

As results, young consumers' using time of mobile phone is very short. Therefore companies must concentrate on R&D activities. They continually research about market, technological developments, consumers' needs etc. Especially they follow the changes in consumers' needs. This directs the companies to perform correct innovation activities.

In this study, only one dimension of consumer innovativeness, technological innovativeness, has been handled. The other dimensions may be investigated in next studies. Additionally mobile phone is selected as technological product. A different product may be selected in next studies.

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